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ABSTRACT

Scores on the Diederich Composition Rating Scale were correlated with measures of specific attitudes toward reading and general attitudes toward school for 920 students from grades 4, 6, 9, and 12. This was a subsample drawn from the fall 1974 and spring 1975 Virginia Educational Needs Assessment. A direct linear dependency between student attitudes and composition quality was found in this sample. General student attitudes contributed the greater proportion of the variance, indicating that self-concept and attitudes associated with success in school were also associated with success in writing. Student attitudes toward reading were also significant predictors of success in writing. Grade level, while an important predictor, was not as strong a predictor as either attitude measure. (AA)

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An Investigation of Writing Ability as a Function of Student Attitude: General and Specific

(DEF)

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ABSTRACT:

Composition quality might be more effective if research could isolate factors related to it. This study placed emphasis upon creative mental processes inherent in quality composition thru student attitudes. The Diederich Composition Rating Scale was correlated with specific and general attitudes of students.

A direct linear interdependence between student attitude and composition quality exists. This suggests that encouraging a healthier self-esteem would improve writing ability. A suggestion for further investigation into the relationship between student attitude and the more analytical factors already associated with writing ability would serve to better define the factors necessary to quality written composition.

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INTRODUCTION

A complex phenomenon such as written composition quality has defied careful analysis of its major contributing factors (Lyman, 1929). This is clearly evident from the many studies already attempted, not only for the definition of the component traits associated with quality written behavior (Braddock, 1969; Raph, 1965; Chester, 1969), but also for the measurement of that behavior (Woodward and Phillips, 1967; Braddock, 1969). In most cases, previous studies have met with small success, generally due to the lack of reliable, valid and precise instrumentation for evaluating quality written composition. As late as 1963, no method for evaluating abilities in composition in terms of 'objectively' scored items was available. Becker (1967) substantiated this claim four years later in a critique of the instrument being designed for measuring writing ability for the CEEB. He wrote that the quality of the criterion variable (writing ability) was the major factor in making the CEEB study superior to others of its type and in making its conclusions more useful. Thus, while composition quality is our major concern, the quality of the instrument measuring that quality is equally important. Braddock (1969) likens the state of the art of measuring writing ability to the state of chemistry in its period of emergence from alchemy in the middle ages. Thus, we can see that measurement of writing ability presupposes not only knowledge of measurement but also knowledge of writing ability (Steinmann, 1967). Knowledge of what ability to write is, then, seems to be the major downfall in studies concerned with the measurement of that ability.

The literature is replete with attempts to measure writing ability in terms of its component factors. Hunt (1965) has related length of minimal terminable unit to composition quality. Nelson (1965) has isolated writing

subject matter content, maturity of writer and preference toward a particular type of writing as important factors. Jacobson, et al (1976a) have found that specific writing and spelling variables are related to quality composition. The problem with these studies seem to lie in that the evaluation is performed upon the product rather than upon the necessary processes of mind used to create that product. This is evident from the above cited studies and the abundance of studies relating writing quality to such analytical factors as grammar instruction (Woodward and Phillips, 1967), reading comprehension (Zeman, 1969) and socioeconomic status (Raph, 1965).

The present study placed greater emphasis upon the mental processes related to quality composition by considering writer attitudes which serve as an easily measurable framework within which these mental processes work and at the same time, provide a more accurate measure of the ability of a student to produce quality written work. Wlecke and Rohman (1965) has suggested that development of the necessary attitudes for the formation of effective concepts for writing is a possible teaching approach, yet little or no investigation has been done studying the effects of attitude on quality of written composition.

Thus, the primary objective of this study was to determine if the relative quality of student written composition can be accurately predicted by grade level, by general student attitudes and by specific student attitudes towards reading. Others have related student attitudes to their academic performance, (Jacobson, et al, 1970), among these, student attitudes towards reading with reading comprehension (Chester, 1969). Reading comprehension has also been related to various analytic writing variables and subject content of reading matter (Zeman, 1969), as has prior reading experience (Braddock, 1969). Furthermore, it is self evident that better readers are more interested in reading than poor readers. Thus, if attitudes towards reading affect reading comprehension and reading comprehension affects writing ability, then should not

student attitudes towards reading reflect writing ability and quality of written work?. Criticism or praise of ability to read or write not only affect attitudes towards reading, but also affects more general attitudes such as self concept and student attitudes towards school, teachers, peers and community. These more general attitudes all should affect writing ability and at the same time, reflect many of the factors already established as related to writing ability such as socioeconomic status (Raph, 1965) and writing topic (Chester, 1969).

Smith (1970) has characterized both reading and writing as psycholinguistic processes and suggests that research be directed at the commonalities inherent in these processes. This is a secondary objective of this study. If attitudes affect academic achievement and these psycholinguistic factors, then perhaps attitudes can be isolated as a common denominator being at least as efficient if not more efficient than the more traditional means of predicting general abilities. This property of student attitudes coupled with their property of providing a measurable framework within which the necessary mental processes for quality written composition are formulated, provides the basis for their investigation as predictors of writing quality.

In summary, two objectives suggest the purposes of this investigation. The primary objective was to determine if the relative quality of student written composition can be accurately predicted by grade level, by general student attitudes and by specific student attitudes towards reading. A secondary objective follows from this primary purpose, that is, if it can be shown that attitudes can accurately predict writing quality, then perhaps attitude is a factor common among many types of academic ability, perhaps even providing a more efficient predictor of academic success than the previously used, more traditional means of predicting general abilities. This would emphasize the need for further investigation into the value of student attitudes.

INSTRUMENTATION

As it has been previously pointed out, writing quality is a trait not particularly amenable to measurement. Attitudes also fall into this same category. Instruments designed to measure attitudes and writing quality are usually confounded with error due to the inability to precisely define what is being measured, as in the case of writing quality and due to a change in what is being measured, as is the case in measurement of attitude. This section describes the development of the instruments used in this study, their reliability and the validation attempts made to justify their use as measures of writing quality, general student attitudes and specific student attitudes towards reading.

The ETS - Diederich Composition Scale was derived from a factor analysis of ratings on 300 college freshmen's short, expository compositions. The ratings were given by 53 distinguished readers in six different fields, college English, social science, natural science, writers, editors and business executives. The sample was stratified on the basis of high and low scores on the verbal subscale of the ETS Scholastic Aptitude Test to maximize power of discrimination. Furthermore, after random sampling from the high scoring and low scoring groups, essays from the two groups were matched across subject content.

After is was determined that no significant difference existed between ratings of essays with different topics, a Q-type factor analysis isolated five clusters of readers who most agreed with the other readers in their cluster and at the same time, most disagreed with other readers not in their cluster. A tabulation of the comments of the readers in each cluster suggested the distinctive emphasis of those readers in judging the essays. The emphasis of judgment for the first three clusters is as follows:

1) ideas - richness, soundness, clarity, development, relevance

2) mechanics - usage errors, punctuation, spelling

3) organization, wording, phrasing, flavor, style, individuality, interest, sincerity

No solid evidence was found that any reader was entirely blind to any of these qualities, rather, differences in emphasis, heightened by absence of directives and factor analysis were the primary causes for differences in reader judgment. Observer agreement in this case was estimated between .31 and .41. As a result, each rating trait was defined more precisely and common standards were applied resulting in eight categories divided into two classes. The first class was labelled 'general merit' and consisted of four categories, ideas, organization, wording and flavor. The second class was called 'mechanics' and included usage, punctuation, spelling and handwriting. Each category was precisely defined and the essays were rated on a 5 point scale in ascending order. Due to the importance English teachers attach to ideas and organization in composition, the scores for these categories were doubled in determining the overall composition quality score, although this refinement has no sound basis in measurement (Diederich, 1966).

In this investigation, each essay was rated twice by different graduate students in the school of Education at the University of Virginia and inter-observer reliabilities were estimated. The raters attended an instruction session on how to use the instrument and some samples were rated and discussed. Reliabilities were estimated using the Pearson product moment and Spearman-Brown formulas. Table I below indicates these values for the instrument class subtotals and the overall totals.

TABLE I - RELIABILITIES

	Pearson	Spearman-Brown
General Merit Subtotal	.73	.84
Mechanics Subtotal	.67	.80
Overall Total	.71	.83
(Subsample N = 1015)		

Two reasons were responsible for the choice of the mean General Merit subtotal over both observers as the criterion variable representing writing quality in this study. The first was the fact that quality of written composition has already been assessed in terms of writing variables such as spelling and usage (Jacobson, et al, 1976a; Raph, 1965) and this study was more concerned with communication ability and writing quality as opposed to the more analytical measures of writing ability such as spelling and punctuation. The second reason was the relative magnitude of the General Merit subtotal reliability as compared to the estimate for the overall total. There is little difference between the two values, but the General Merit slightly exceeds the Mechanics Subtotal. Using the mean estimated from the two raters also helps to further insure the validity of the scores as measures of writing quality as opposed to writing productivity or accuracy.

The predictive validity of the ETS - Diederich Composition Scale was assessed as part of the Phase II activities of the Virginia Educational Needs Assessment Project. Due to the lack of another valid and reliable instrument designed for measuring writing quality, validity was assessed in terms of correlations with standardized test scores and from attitudinal measures (VAAQ) obtained as part of the Needs Assessment Project. Table II below shows the correlations.

TABLE II

CORRELATIONS OF DIEDERICH SCORES WITH STANDARDIZED AND ATTITUDINAL TEST SCORES

	GRADE 4	GRADE 6		GRADE 9	GRADE 12
STEA Aptitude	.58	.66	SCAT Aptitude Total	.61	.53
SRA Composite	.69	.71	Step Concepts	.51	.42
			Step Reading	.61	.57
			Step Writing	.52	.49
			Step Spelling	.61	.59
			English Expression	.55	.60
VAAQ Total	.34	.30	VAAQ Total	.45	.44

All correlations significant at the .05 level - correlations computed using ETS - Diederich Composition Test total score

Since we could expect all of the standardized tests mentioned in Table II to include writing quality as one part of the attitudes or achievement they have been designed to measure, a moderate correlation is expected. We can conclude then, that while the correlations do not tell us that the ETS Composition Scale is measuring writing quality, they do indicate that some trait being measured by all the standardized tests is also being measured by the ETS Composition Scale. Perhaps more important, however, is the relative stability of the correlations across grade levels which indicates that whatever common trait is being measured, is also being measured consistently.

The Virginia Affective Assessment Questionnaire (VAAQ) was developed by the Virginia Educational Needs Assessment Project staff in 1969-70 and 1974-76. It was designed for affective screening and for measuring those attitudinal characteristics which are directly associated with academic achievement, providing an instrument in the affective domain comparable to the achievement

and aptitude instruments in the cognitive domain that have long been established. Thus, the VAAQ inventory along with the more traditional achievement and aptitude batteries allows a more complete and more precise assessment of the behaviors and needs of public school children.

Four forms of the VAAQ were developed, a primary form for grades kindergarten through second, an elementary form for grades three through six, an intermediate form for grades seven through nine and a secondary form for grades ten through twelve. Each form was keyed in five different ways, a total scoring key measuring general student attitude and four subscale keys as follows:

1. Citizenship - Items in this scale measure citizenship in terms of both understanding of and support for societal structures and acceptance of and concern for other people.

2. School, Education and Learning - Questionnaire items contributing to this scale measure a student's interest and inquisitiveness in learning and care in completing school work.

3. Interpersonal Relations - Items for this scale deal with how the student relates to teachers and peers in the classroom; in particular, group orientation and attitudes toward group norms are assessed.

4. Self-Esteem - Items in this scale require an individual to assess his own feelings and performance; items are phrased in terms of the school environment, but they represent the student's general feelings about himself and his capacity to cope. (Jacobson, et al, 1976a, p.1)

The item clusters in each subscale were distributed randomly in the questionnaire to enhance the validity of item response.

Reliability was estimated through correlation of split-half scores produced from responses from the 1974-75 Needs Assessment sample. Odd-even test dichotomy produced half-test scores and internal consistency was estimated through use of the Spearman-Brown formula. Reliabilities ranged from .86 to .94 based on an average of 3,500 students' scores in each of grades 4, 6, 9, and 12. Such high internal consistency estimates tends to substantiate the claim of the instrument constructors that the VAAQ is a reliable indicator of student attitudinal characteristics.

Since the VAAQ was designed to measure student attitudes associated with academic success, validation procedures were based on the association between VAAQ scores and achievement measures as well as item content.

In the 1969-70 phase of the Needs Assessment study, strong positive correlations were found between VAAQ scores and student grade point average and attendance. In addition, significant correlations between VAAQ scores and scores on the High School Personality Questionnaire were discovered. The four subscales were substantiated by a factor analysis of the subscale scores indicating four factors with the same item structure as the subscale scoring keys. Between 1970 and 1974, significant increases on VAAQ scores were associated with improved classroom climate, increased positive classroom interactions and improved instructional programs. Data collected in the 1974-75 testing program of the Needs Assessment Project was used to investigate the relationship between the VAAQ and achievement test results. Significant positive correlations ranging from .35 to .52 were found between the VAAQ total scores and the SRA and SCAT - STEP achievement tests. In addition, an investigation of associations between the McCall-Crabbs reading comprehension tests and VAAQ total score showed a strong stable association between the two sets of scores at all grade levels.

Several other investigations offered further evidence of the validity of the VAAQ as an instrument measuring student attitudes meaningfully related to school achievement. Of particular interest was a study done to analyze the usefullness of the VAAQ scores in predicting writing productivity. Student writing variables, among them total words written, unique words written, words per sentence, and percent of words misspelled, were gleaned from the Fall 1974 Needs Assessment data and correlated with the VAAQ scores. The correlations were generally significant at the .05 level or better and in many cases, it was found that a VAAQ score was more effective in predicting the writing variable values than the achievement measures' scores. Furthermore, the correlations remained consistent (and significant) across all grade levels (Jacobson, et al, 1976b).

In summary, all forms of the VAAQ measure four independent affective sub-domains, that alone and totalled, are meaningfully related to the academic success of pupils throughout all grade levels. The tendency of the VAAQ total score to be more stable across all grade levels, to have a greater degree of association with all the aptitude and achievement measures used in the validation studies, and to have a higher internal consistency than any of its subscales led to the choice of the VAAQ total score as one of the independent variables in this study, specifically the one measuring general student attitudes.

In the 1974-75 Needs Assessment project, one of the achievement measures administered was the McCall-Crabbs reading comprehension tests. It consists of a reading passage followed by questions requiring knowledge of content. The McCall-Crabbs testswere modified prior to administration by three additional questions addended to the ends of each reading passage. The

questions were as follows:

1) How did you like the story?
2) How hard did you find this story?
3) How hard did you find the questions?

Four answer choices were provided ranging from "very much" to "not at all" and from "very easy" to "very hard". In the fourth and sixth grade, test respondents had five sets of scores in the fall and in the spring, three of which were based on identical story passages normed for their respective grade level. The other two were variable passages. As a result, this study used only the three identical story passages for analysis to further insure validity.

Essentially, this study's analysis required a measure of specific student attitudes towards reading. The addended questions seemed the most logical and content valid means of providing such a measure. An operational definition of attitude used as the basis of forming a construct of what this investigator defines as 'specific attitudes towards reading' is that an attitude is an enduring syndrome of response consistency with regard to a set of phenomena. Response consistency can be defined as any systematic variation due to response which requires this investigator to propose certain assumptions. Since the stories being used were normed by grade level, variance due to the subject matter in each of the stories was considered random. These assumptions will have bearing on the relative merits of the reliability estimates of this attitude measure. The first of the three addended questions was, "How did you like the story?". Besides being significantly correlated with the actual reading

comprehension score of that story, the question probably was answered with some consideration given to the subject content and attitude toward reading. It was included in this study as a predictor. The second question was rejected as a variable for this study as the difficulty of the story itself could be easily ascertained from an examination of the McCall-Crabbs total scores. Student perception of the difficulty of a story normed for his grade level is likely to be less reliable then his actual comprehension score. The second question is indirectly answered in the third question, in any event. A student's perception of the difficulty of all the questions is not so easily inferred from his reading comprehension score. Due to the fact that a judgment of a set of questions, as opposed to a single story, is required, the answer is more likely to reflect the respondent's biases toward or away from reading while incorporating his attitudes toward the story itself.

To summarize, the instrument purported to measure specific attitudes towards reading consists of two questions addended to the end of story passages from the McCall-Crabbs reading comprehension tests. The stories and their associated questions were normed by grade level. An assumption was made that affects the interpretation of the reliabilities estimated in the analysis. It was that variation due to story content that constitutes non-systematic variability, tending to make the reliability estimates somewhat conservative. Content validity was established and used in the choice of the two questions used as independent variables in this study. Both spring and fall batteries were used to judge the consistency of response and to insure further validity by increasing the sample of behavior being measured.

An analysis of variance of the responses for all six stories nested within fall and spring testing sessions showed that a significant difference existed

between the testing sessions. Since the essays were administered in the Fall of 1974, it was expected that the fall responses would be the more reliable of the two sets. No significant differences were found within each testing session. Internal consistency was estimated using the Spearman-Brown formula for the results of measures from three stories in the fall. It was found to be approximately .7 for both questions. This reliability estimate is relatively low which reemphasizes the need for research of the measurement of attitudes.

Validity, aside from the obvious face and content validation remains the final problem in using these questions as an instrument to measure specific attitudes towards reading. A construct of the trait being measured must be evaluated in terms of the situation under which it is being measured. Thus, caution should be exercised in the generalization of results of using this instrument. The establishment of predictive validity was shown from the results of this investigation and they indicate a magnitude of association consistent with other instruments designed to measure attitude. The relatively poor validity along with the ease of administration also suggests that measures of this type are badly in need of further study.

In summary, the instruments described above are acceptable with respect to their use in this investigation. Reliability of all three instruments indicates that they are consistent measures and the logic and methodology used in their development suggests they are also valid measures. In the case of the ETS composition scale and the VAAQ, further evidence strengthens the claim of validity. In the use of the questions used to measure reading attitudes, predictive validity is established as a result

of this study and the particular case of administration and accessability suggests that further evidence of their value should be a growing concern to those doing research in the language arts.

COLLECTION OF DATA

The data used in this study was collected in the Fall of 1974 and Spring of 1975 from 60 school divisions in 22 planning districts across the state of Virginia as a part of the Virginia Educational Needs Assessment Project. A set of categories was randomly sampled yielding three mutually exclusive and exhaustive classes; geographical region, school division enrollment and desnity of total population in the school district. These categories were used in a stratified random sampling procedure yielding 60 sample divisions. These sample divisions were tested against Whitmore's (1969) nineteen variables measuring the effectiveness of school systems and a satisfactory degree of representativeness was found at the .05 level of significance. A random sample of classes from these divisions completed the sampling procedures.

Data consisted of test results from the fourth, sixth, ninth and twelfth grades. Ten percent of the total sample, consisting of 21,972 sets of test scores also included creative writing essays from the Fall of 1974 testing session. Students in the fourth and sixth grades were asked to write for 20 minutes and were provided with a picture of a forest fire to suggest themes. Ninth and twelfth graders were asked to write for 30 minutes on a person they admired. Test data was provided in machine readable form and ETS Composition Scale scores by category, subtotals and totals were keypunched onto cards. All the data were stored in a management system on the CYBER-170 computer at the University of Virginia.

After test score sets not containing the data pertinent to this study were eliminated the final sample consisted of 920 sets of test scores. Each set of test scores contained the grade level, totals of the 'General Merit' subsection of the ETS Composition Scale, answers to the selected questions at the end of each of the McCall-Crabbs reading test passages, which were given values from one to five representing 'not at all' to 'very much' and 'very easy' to 'very hard' for the two questions, and standardized VAAQ total scores. The scores from the two raters of each student essay were combined to produce the criterion variable. The six story passages, three administered in the spring and three administered in the fall, for each of the two questions provided several more of the predictors for the final analysis. Two standardized VAAQ total scores, one from fall and one from spring were used as the two final predictors.

ANALYSIS

Since the composition exercises were written in the Fall of 1974, the results of tests taken concurrently with the composition exercises were expected to be more highly correlated with the writing quality scores than the results of the tests taken in the Spring of 1975. The questions being used to measure specific attitudes towards reading showed a significant attitude change from fall to spring, supporting the above deduction.

Since readers were not instructed to judge composition quality by grade level, it was expected to explain a good part of that score. It was included as an independent variable for the sake of valid experimental results and also as an example of a more traditional achievement measure. It was expected that even while grade level was significantly related to ETS Composition

Scale scores, it would not be as strong a predictor as general and specific student attitudes.

This study was essentially correlational in nature and the preliminary hypotheses are no better than reasonable formulations of expected results. Since attitude was being introduced as a predictor of writing quality, it was expected that a strong and significant correlation between the two measures existed of about the same or perhaps slightly better than the magnitude of the correlations presented as evidence of the validity of the ETS Composition Scale.

Thus, the expected results can be summarized in the following three statements:

1) Results of the fall 1974 test battery were expected to produce higher correlations with the scores representing written composition quality than the results of the spring 1975 testing battery.
2) Grade level of writer was expected to be correlated with writing quality scores, but not as much as general and specific student attitudes.
3) A strong and significant correlation between writing quality and general and specific student attitudes was expected with a probable magnitude either equal to or surpassing the more traditional measures of academic achievement i.e. approximately .5 to .6.

The analysis employed a multiple-step multiple linear regression equation in order to assess the relationship between the criterion, each independent variable and groups of independent variables. Weights were assigned to the

variables representing grade level, specific attitudes toward reading and general school attitudes in order to produce a linear combination that would most accurately predict the variable representing quality written composition.

RESULTS AND DISCUSSION

A direct linear independence was found between both specific and general attitude measures and writing quality. Table III indicates the significant correlates of writing quality and the magnitude of their correlations. It should also be noted that the correlates are presented in the order they were entered into the regression equation with the multiple correlation and R-square representing cumulative values.

TABLE III
SIGNIFICANT CORRELATES OF WRITING QUALITY

	Multiple Correlation	R-Square
Fall VAAQ	.41	.16
Addended Question #1 (fall)	.48	.23
Grade	.52	.27
Spring VAAQ	.55	.28
Addended Question #2 (fall)	.555	.30

The second question measuring specific student attitudes towards reading had a correlation of -.15 indicating that the harder the questions were perceived by the writer, the lesser the quality of his writing. In addition, the shared variance between this question and writing quality scores was less than 2%.

Results of the tests administered concurrently with the essay assignment proved themselves to be better predictors than results of tests administered in the spring of 1975. Of all the spring testing results only the spring VAAQ scores were found to be significantly related to writing quality. The fall VAAQ scores and the first question responses for the fall were the strongest correlates of writing quality. Between them, over 23% of the total writing quality score variance was explained.

Grade level of writer also proved to be significantly correlated with composition quality scores. A correlation of .39 with writing quality coupled with an ability to explain over 4% of the total variance due to differences in corposition quality shows that grade level of writer and writing ability are related. Even more interesting, however, was the failure of grade level to be a better predictor than the two attitude measures employed in the study, specifically general student attitudes and specific student attitudes towards reading. Thus, while grade level of writer is important in the prediction of writing quality, attitudes are more important and more precise in predicting that writing quality.

Specific and general student attitudes, measured concurrently with a sample of expository writing have been shown to be related to the quality of that writing. A correlation between quality and the two attitude measures is .48 making these attitude measures almost as precise as more traditional measures of academic achievement such as SRA or SCAT-STEP achievement tests. The fact that along with grade level over 30% of the variance of writing quality can be explained by general and specific student attitudes makes these attitudes important new traits greatly in need of further study.

CONCLUSIONS

The primary objective of this study was to determine if the relative quality of student written composition can be accurately predicted by grade level, by general student attitudes and by specific student attitudes towards reading. Concurrent measures of attitude along with a grade level factor inherent in the Diederich writing quality scores accurately predict up to 30 percent of the variance attributable to writing quality. General student attitudes as measured by the VAAQ contributed the greater portion of the variance indicating that self concept and attitudes associated with success in school are also associated with success in writing. Specific student attitudes towards reading were also significant in predicting writing ability. Grade level, while being an important predictor of success in writing, is not as strong a predictor as either attitude measure. Perhaps this relationship of attitudes and writing ability takes the first step in joining the more analytical measures of writing ability to the creative mental processes operating in expression of this ability, thereby offering a partial solution of the problem of measuring this many faceted phenomenon.

Thus, instilling a more positive attitude and encouraging a healthier self image increases the desire to write and thus the quality of composition. This relationship and relationships between writing ability and the more traditional measures related to student academic success suggests that attitudes also may be a factor common among many types of academic ability. These observations further suggest that research which investigates the relationships between attitudes and the more analytical measures associated with composition quality and academic ability would serve to better define the role attitude assumes in the development of general ability and to better define the factors necessary to quality written composition.

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